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Orthotrichum fallax, SWARTZ, Var. **truncatulum**, AUST.—Recedit a forma typica, foliis apice sæpius hyalino-apiculatis, capsula augustiore oblonga siccitate cylindrica tota longitudine constricta latius costata basi truncatula, peristomii ciliis dentibus æquilongis, etc.

Base of old buildings, Illinois, *Hall*: rare.

Male flower terminal on a stem-like branch; antheridia small, long-stipitate, eparaphysate (always?)—Readily distinguished from the typical *O. fallax*, (which is given in *Musc. Apalach*, under the name of *O. pumilum*,) by the base of the capsule being truncate and not inflated when dry.

Dicranum flagellare, HEDW. Var. **subfluitans**, AUST.—Foliorum forma et textura normalis; differt tamen caule subfluitante elongato gracili subflexuoso simplici vel subramoso, foliis dissitioribus.

In depressions on the surface of flat rocks on the top of Shawangunk (*Shongum*) Mountain, at Sams Point, New York. Sterile.

Dicranum longifolium, HEDW., Var. **strictius**, AUST.

Differt a forma normali, caule longiore rigidiores subfluitante teretiusculo leniter flexuoso, foliis brevioribus erectis subappressis fere strictis.

With the preceding

Dicranella Schreberi, HEDW., Var. **occidentale**, AUST.

Recedit a forma normali, foliis sæpe integerrimis, cellulis dimidio angustioribus.

Portland, Oregon, *Nevius*.

The moss referred to *Cynodontium Canadense*, MITT., by me in Bot. Gazette, Vol. II, p. 96, is also a form of *D. Schreberi*, and near this variety, but the cells are more lax.—*Dicranum Macouni*, AUST., l. c. is a more lax form of *D. elongatum*, SCHWGR. *Dicranodontium nitidum*, JAMES, is a form of *D. longifolium*.

§ 348. **On the Fertilization of Euphorbia (Poinsettia) pulcherrima.**—The whorl of brilliant scarlet bracts, to which this plant owes its beauty in the flowering season, is evidently designed to attract insects from a distance to the inconspicuous flower cluster which it surrounds. Within this whorl the flowers are grouped in a number of involucre clusters, each of which consists of central pistillate, and a considerable number of staminate flowers. Each of these flowers is a single organ with a pedicel and subtending scale. On the outside and near the top of each involucre is a very large yellow nectary in which nectar is freely secreted. A very few of these clusters have their pistillate flowers perfect to the eye, but in the greater number they are quite abortive or, where externally perfect, their ovules do not seem to be developed. When a cluster becomes mature its gland begins to secrete, and its pistil, if not entirely abortive, protrudes, expanding its three slightly forked stigmas, which are now in a receptive condition. This state apparently lasts but a few days, after which one or two stamens are ex-

sented by the elongation of their pedicels, and shed their pollen. After dehiscence they become deflexed and are succeeded by others which go through the same process. After all have matured, the cluster falls off—unless the pistil has been fertilized, and this seems never to occur, through imperfect development, in plants artificially grown. During this successive development of the stamens, the pedicel of the pistillate flower elongates sufficiently to cause the entire ovary to be exposed.

Growing in our laboratory, this plant is covered when in flower by myriads of minute red ants (*Myrmica molesta*), which may be seen, three or four at a time, with their heads thrust to the very bottom of the nectaries, giving most eloquent testimony to the presence of nectar. Crawling back and forth over each cluster, and from cluster to cluster, they cover everything with pollen, and would thus fertilize the pistillate flowers were they not abortive.

In a state of nature it is probable that each cluster would possess a well developed pistillate flower, which could not, from its earlier maturity, be fertilized by pollen from stamens of the same cluster. The small flies that are known to fertilize many species of Euphorbia, or small bees, to either of which the nectaries of this species seem well suited, would probably carry pollen from cluster to cluster in a given plant; they would also, in flying from one plant to another, effect crossing in its truest sense. In any case, crossing *must* occur between distinct flower clusters.

W. TRELEASE.

Cornell University, Ithaca, N. Y.

§ 349. **Pursh's Station for *Scolopendrium* rediscovered by the Syracuse Botanical Club.**—A member of the Torrey Botanical Club, a dear lover of Ferns, has a high regard for Pursh, whom he thinks hardly used as regards the trustworthiness of his localities, and always rejoices when he is proved right where he has been doubted. The news we have to offer will greatly exhilarate our friend, with whom we must confess a secret sympathy. Before giving the rediscovery of the locality, however, let us extract from Pursh's Journal, which was discovered among the papers of Dr. B. S. Barton by Mr. Thos. P. James, at the time acting Librarian of the American Philosophical Society in Philadelphia, which had come into possession of the Journal along with Dr. Barton's Herbarium. It was published in Philadelphia by Mr. James in 1869, and to his kindness we owe our copy. It is a "Journal of a Botanical Excursion in the northeastern parts of the States of Pennsylvania and New York, during the year 1807."

July 20.—"Mr. Geddes brought me to a deep valley about one mile from his house, where we ascended a steep very rocky hill; here large masses of rocks seem to be piled up, or tumbled over one and another in such a confused manner that it has left large chasms between them, which sometimes appear like caves; as it has a north aspect and overshadowed with trees, all the rocks are covered with moss and vegetables: and I suppose this must be a very interesting place for the botanist in the spring, the walking is very precarious, as